

Fig. 1A PRIOR ART

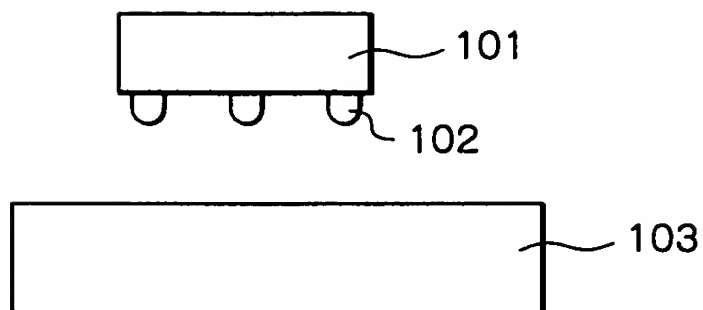


Fig. 1B PRIOR ART

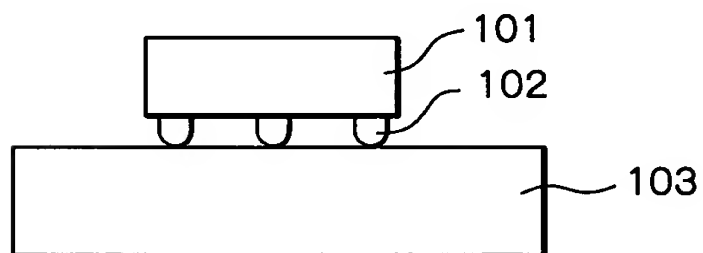


Fig. 1C PRIOR ART

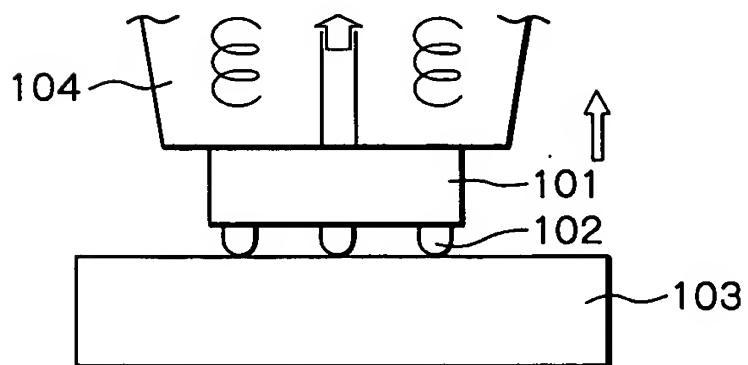


Fig. 2A

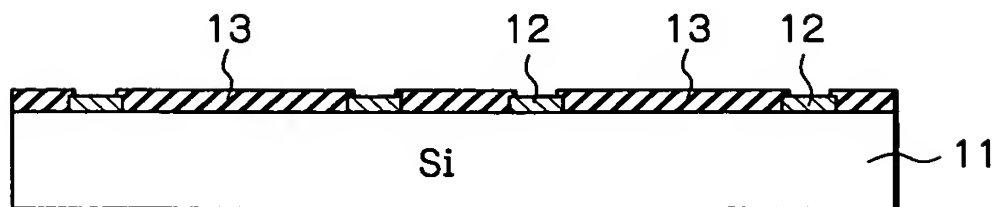


Fig. 2B

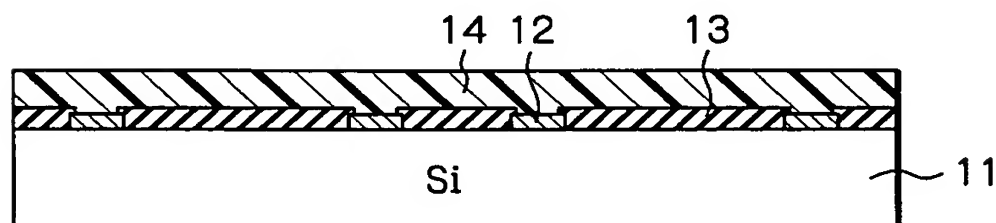


Fig. 2C

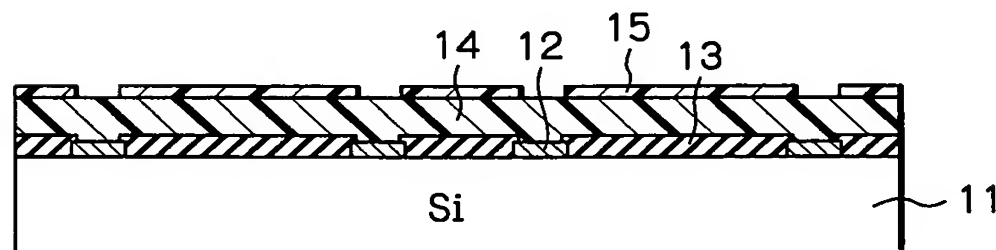


Fig. 2D

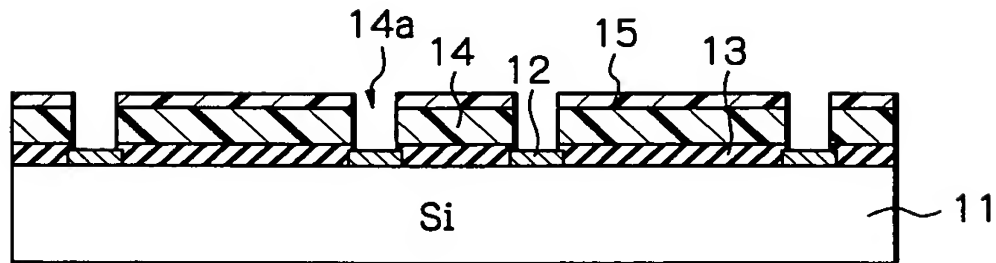


Fig. 2E

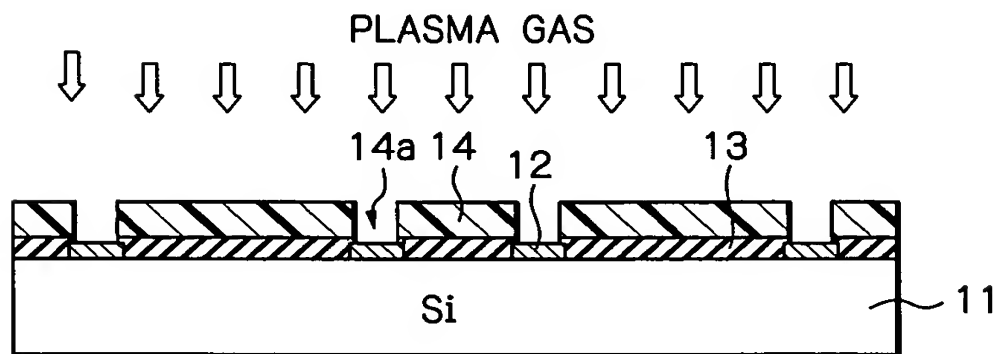


Fig. 2F

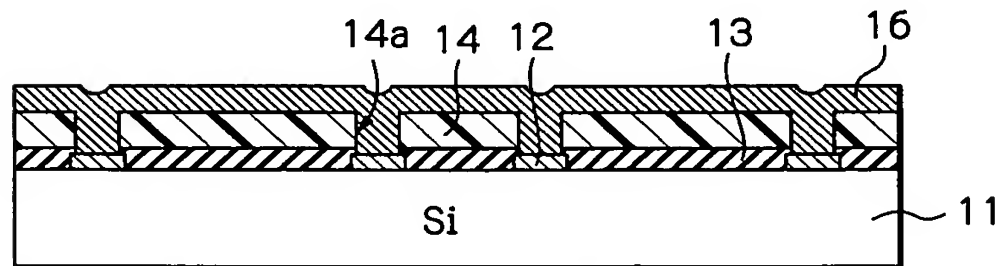


Fig. 2G

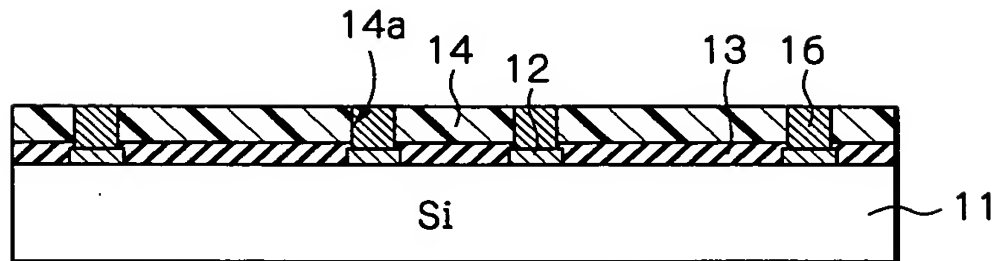


Fig. 2H

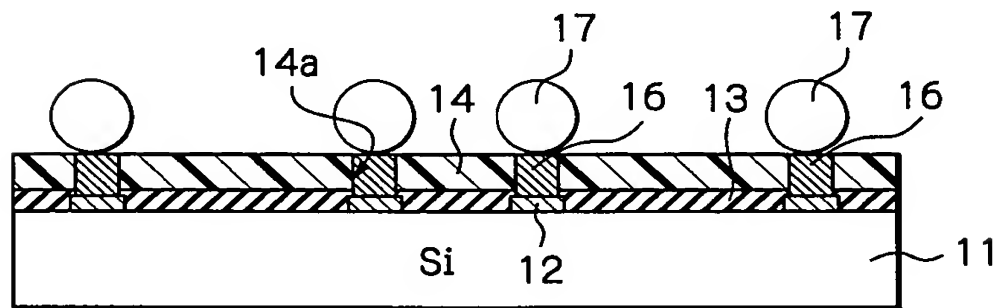
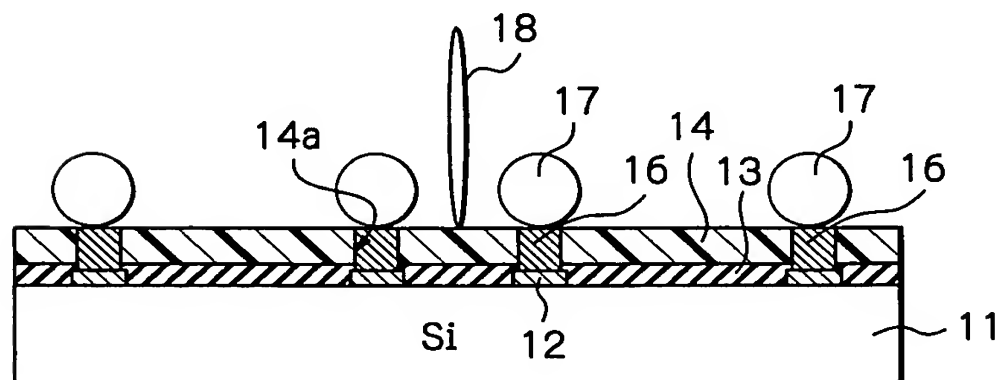


Fig. 2I



Title: METHOD OF MANUFACTURING A
FLIP-CHIP SEMICONDUCTOR DEVICE
WITH A STRESS-ABSORBING LAYER
MADE OF THERMOSETTING RESIN

Inventor(s): Hirokazu HONDA

DOCKET NO.: 067123-0195

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Fig. 2J

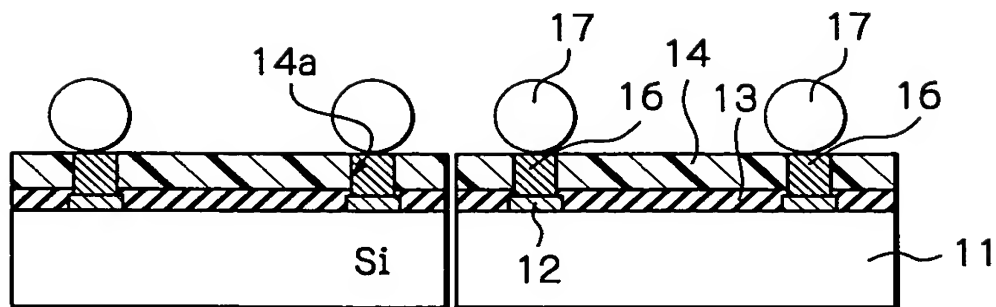


Fig. 3

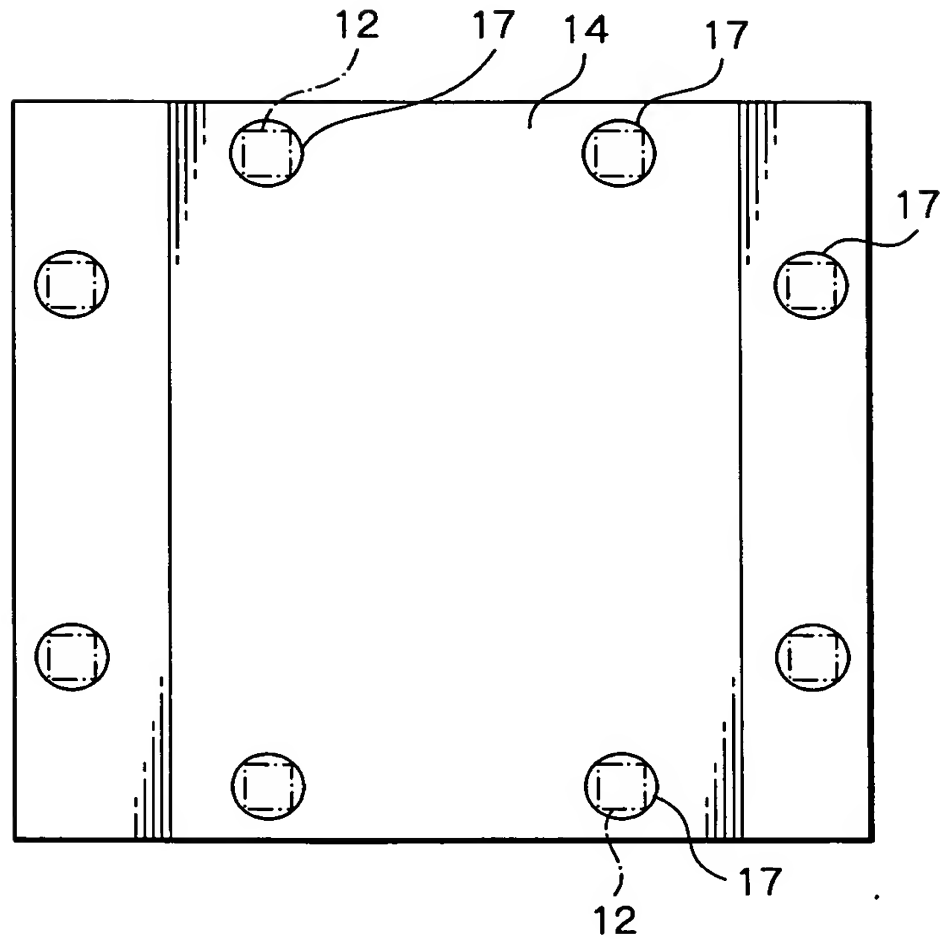


Fig. 4

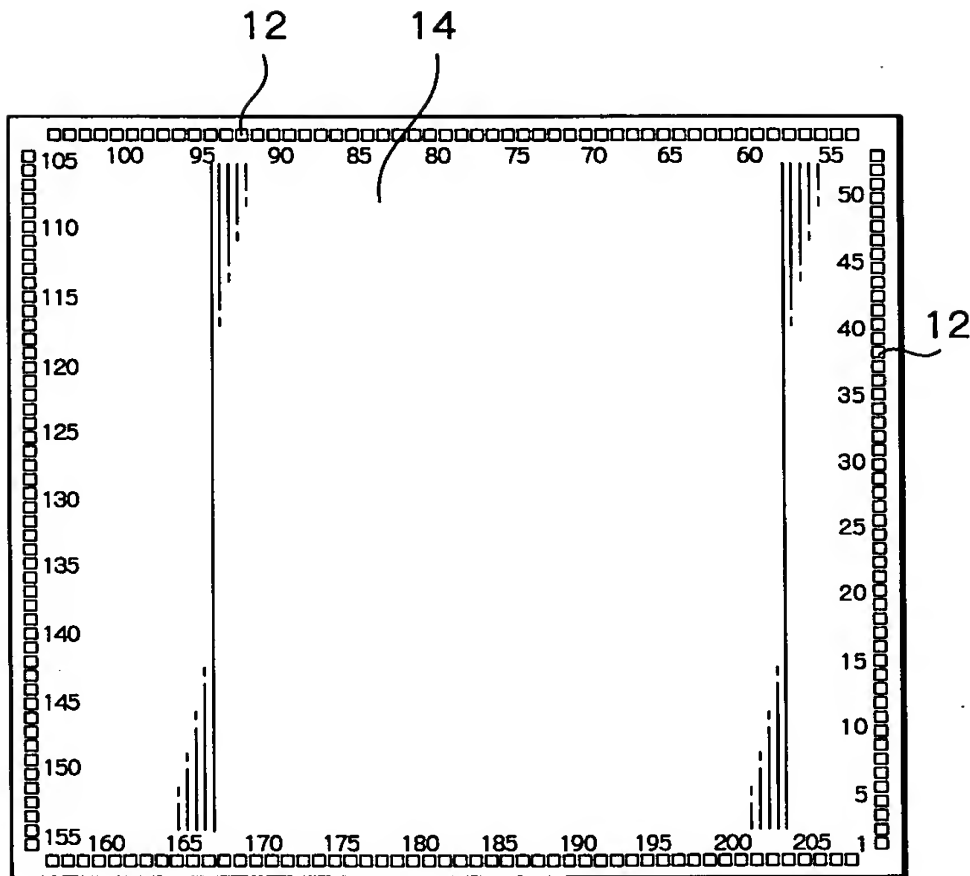


Fig. 5A

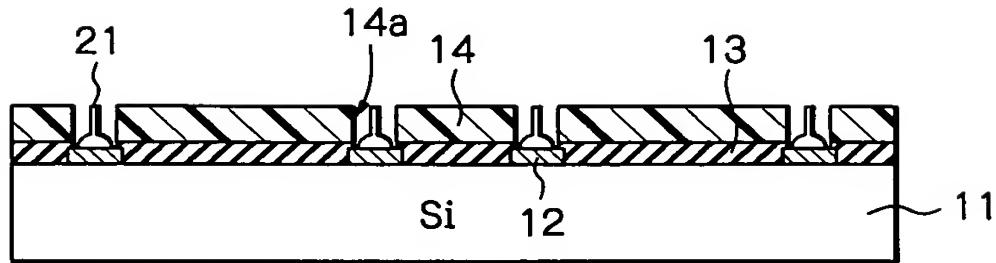


Fig. 5B

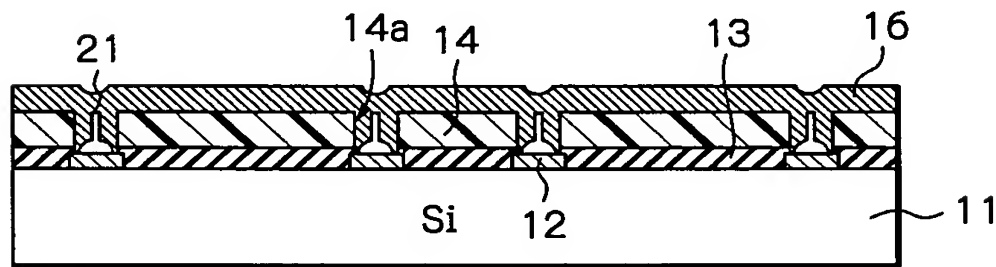


Fig. 5C

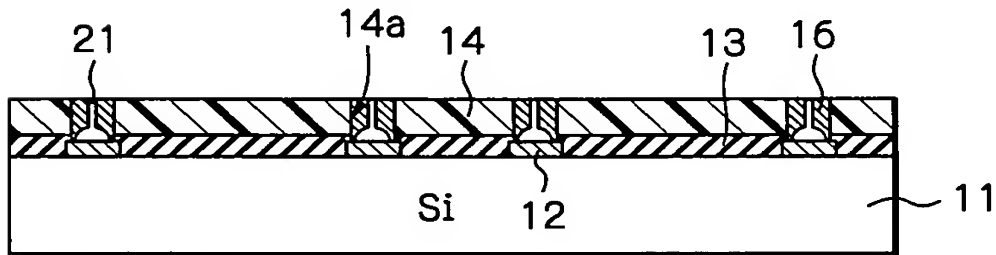


Fig. 5D

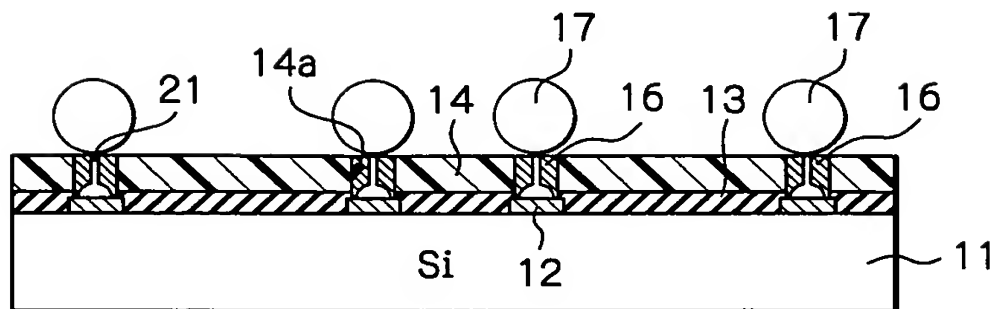


Fig. 5E

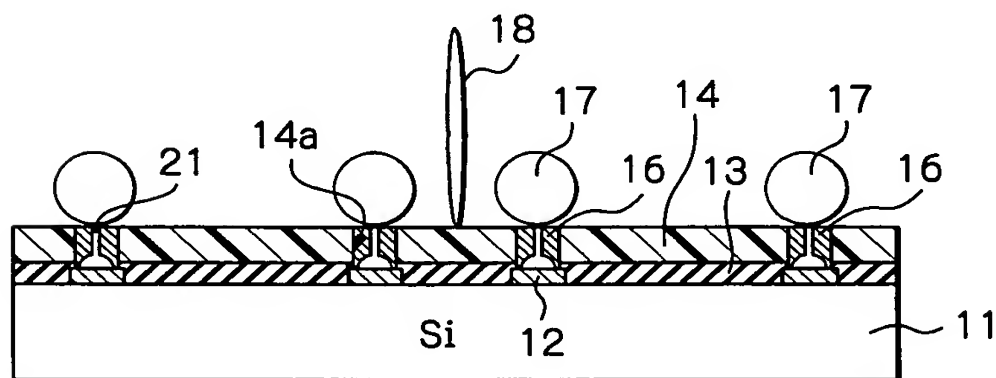


Fig. 5F

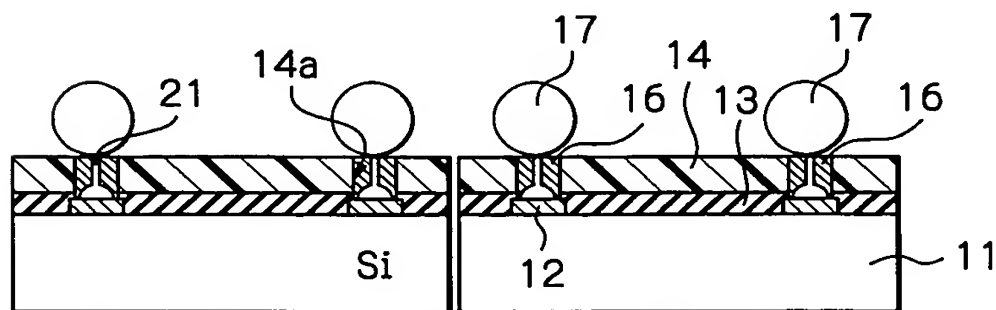


Fig. 6A

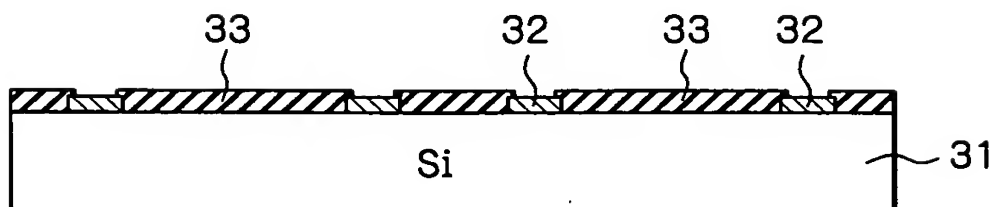


Fig. 6B

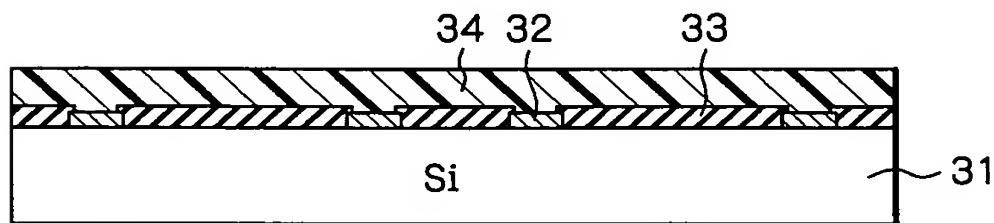


Fig. 6C

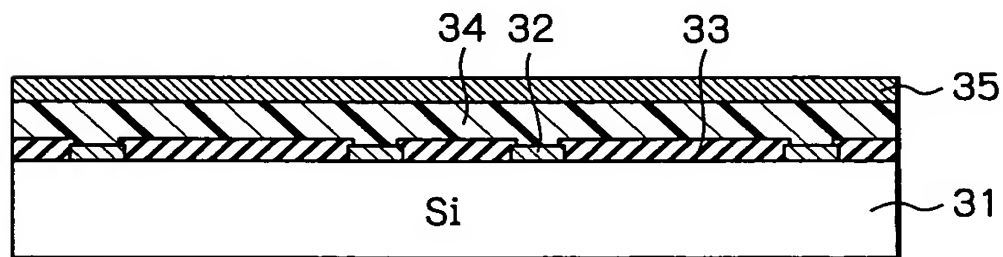


Fig. 6D

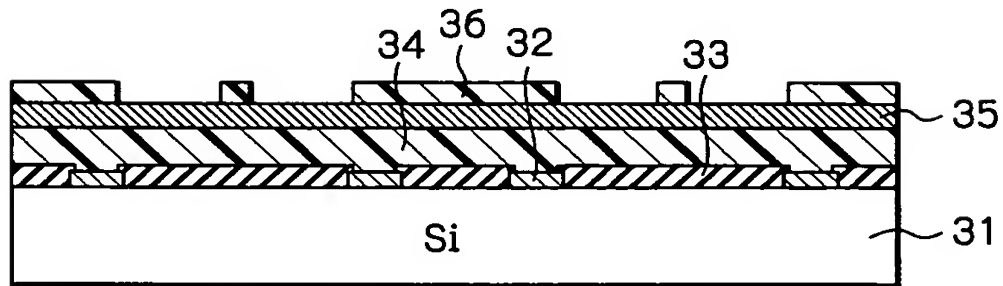


Fig. 6E

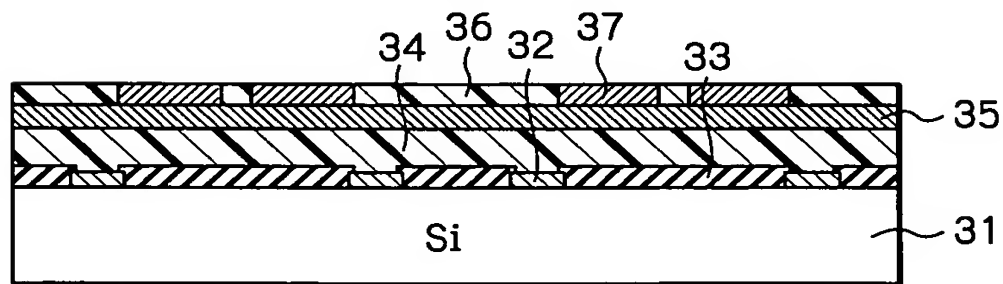


Fig. 6F

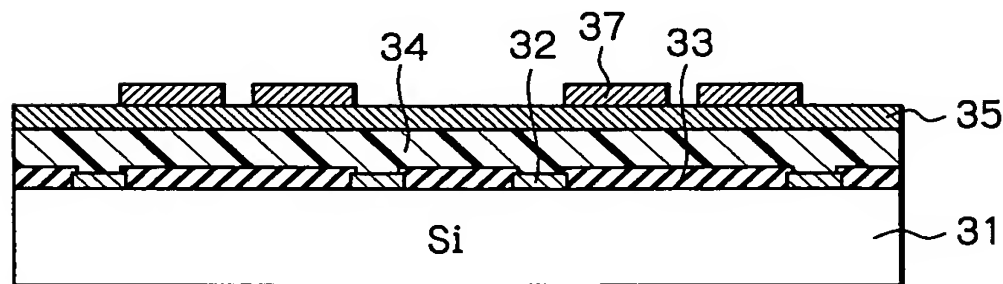


Fig. 6G

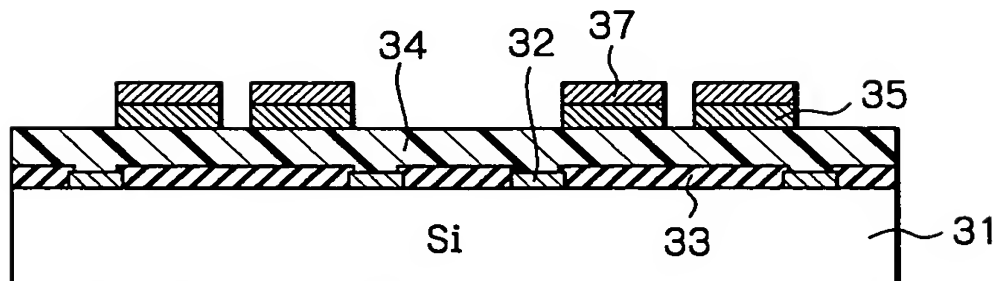


Fig. 6H

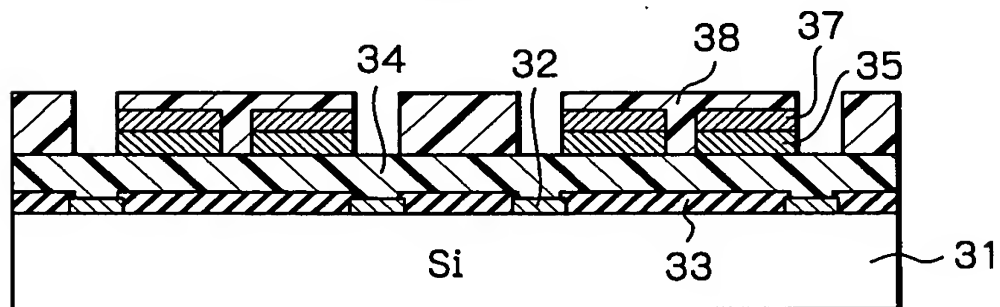


Fig. 6I

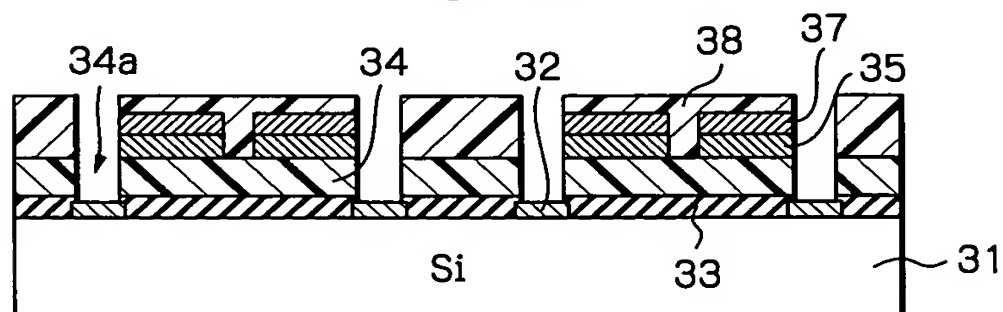


Fig. 6J

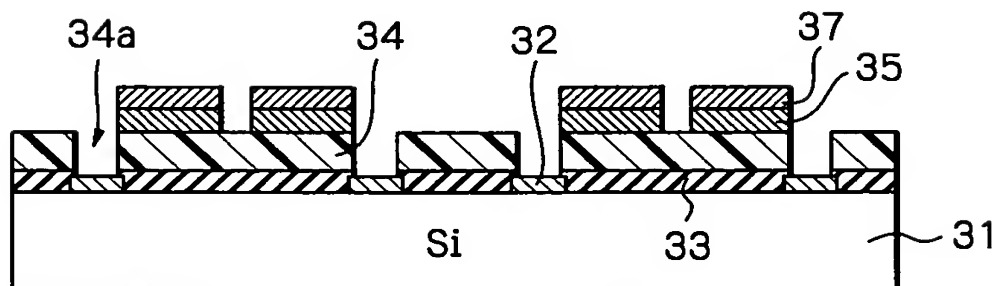


Fig. 6K

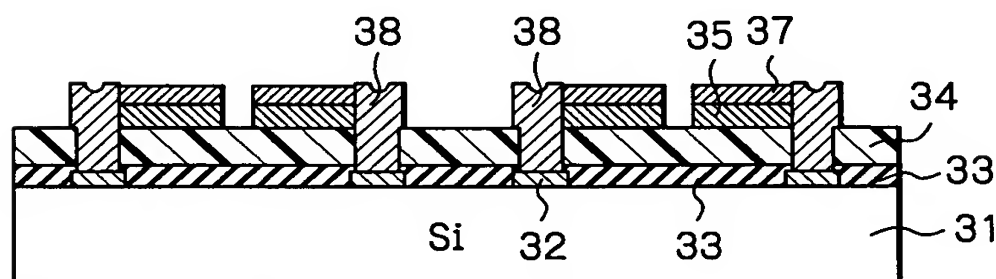


Fig. 6L

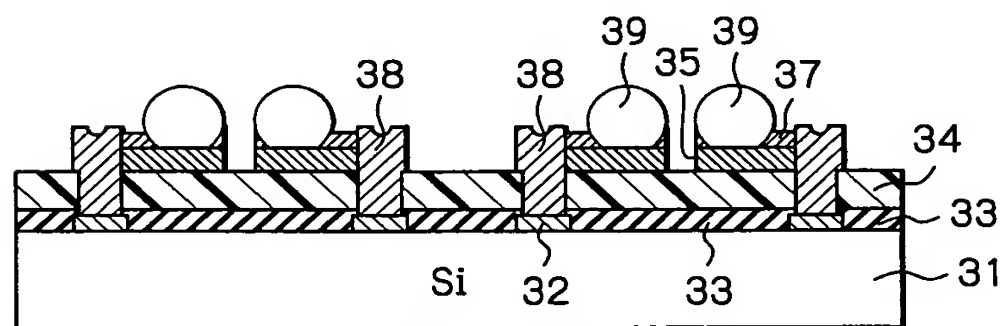


Fig. 6M

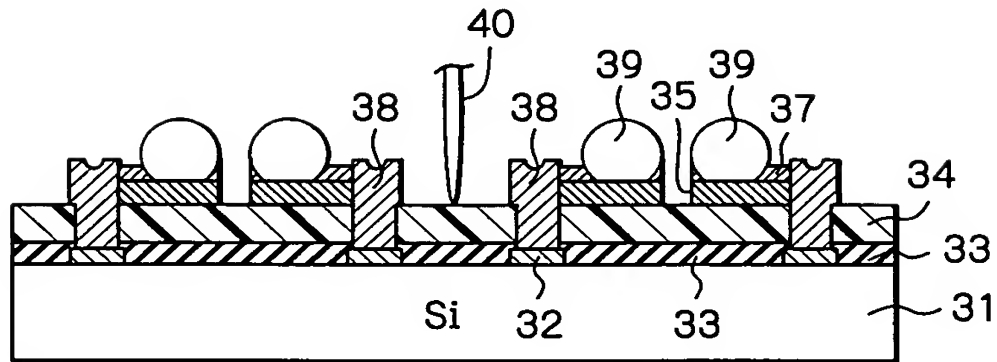


Fig. 6N

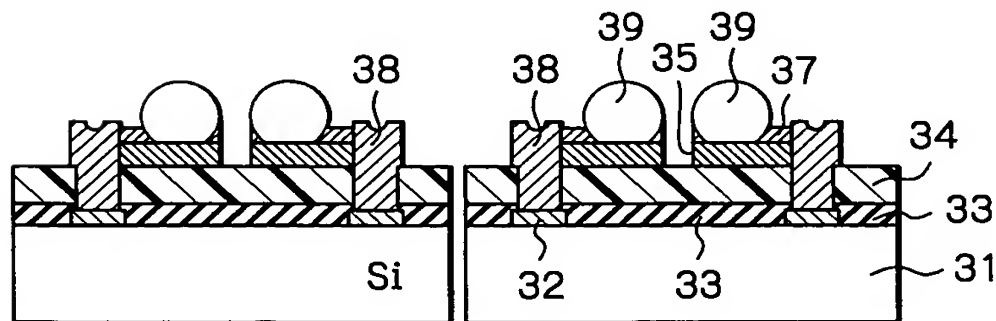


Fig. 7

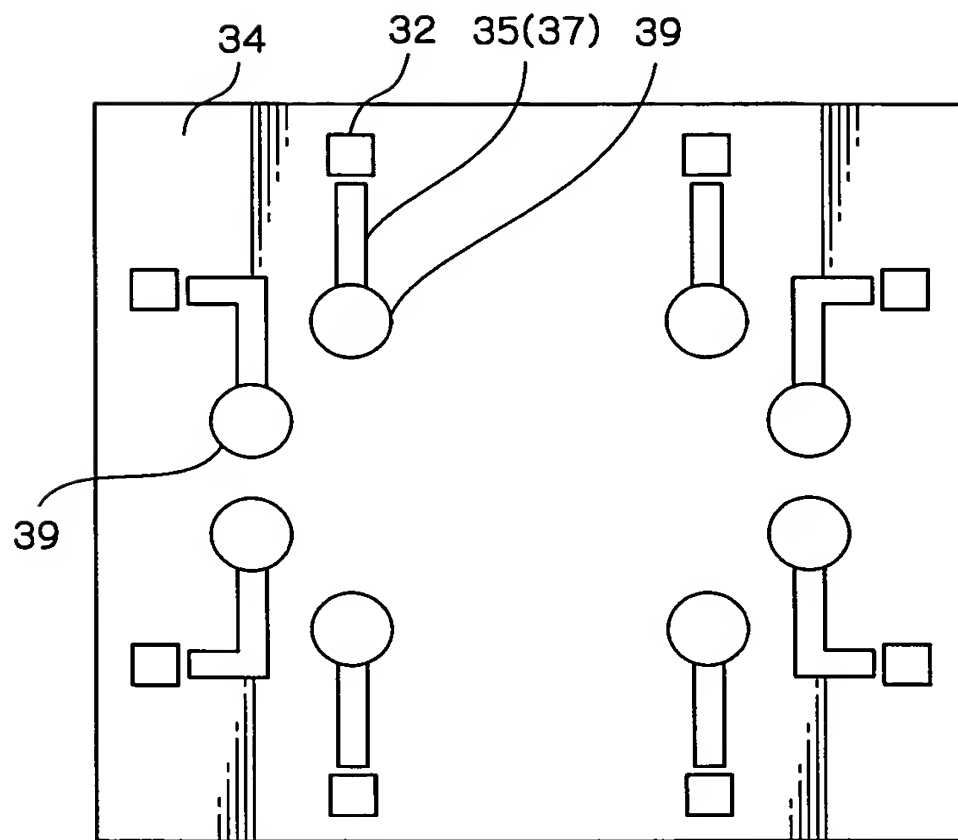


Fig. 8A

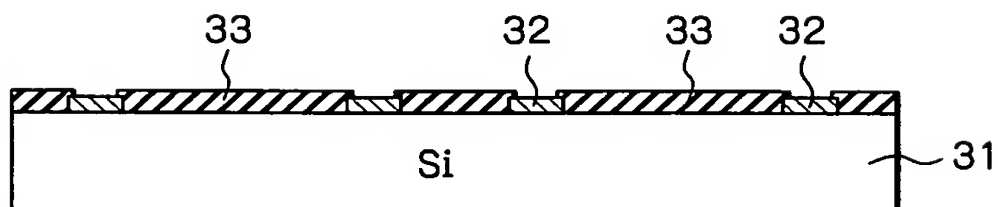


Fig. 8B

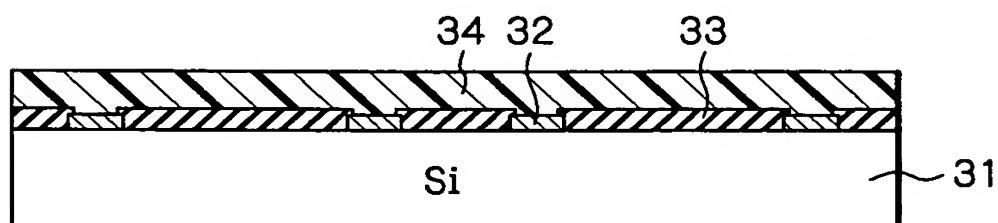


Fig. 8C

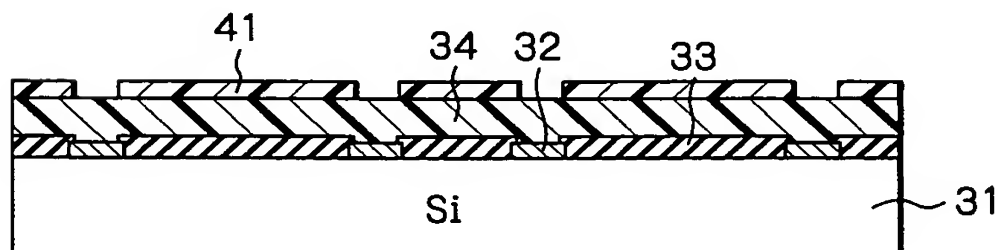


Fig. 8D

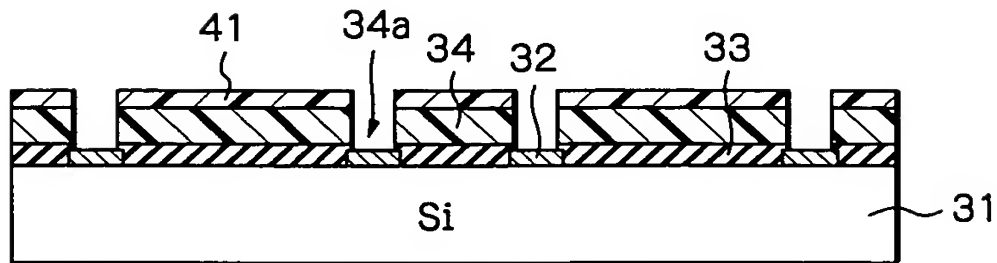


Fig. 8E

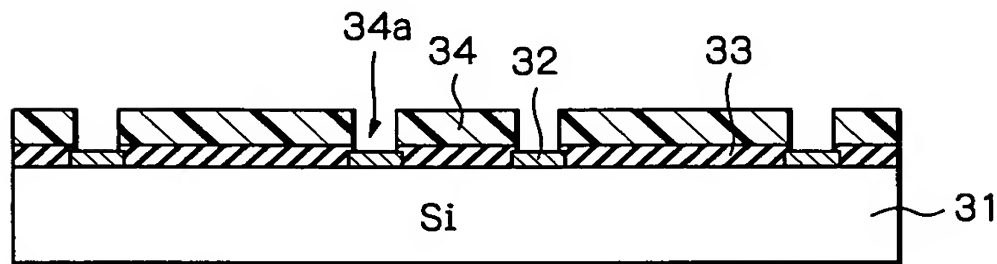


Fig. 8F

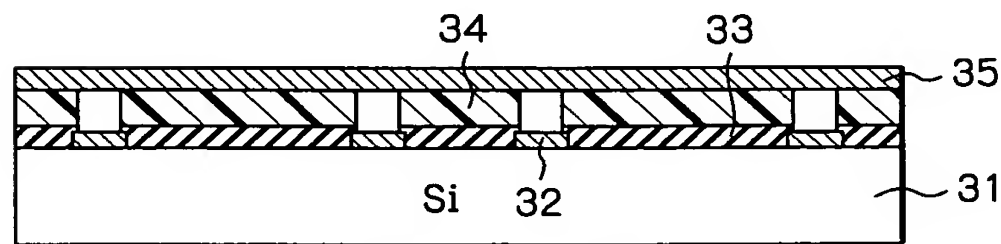


Fig. 8G

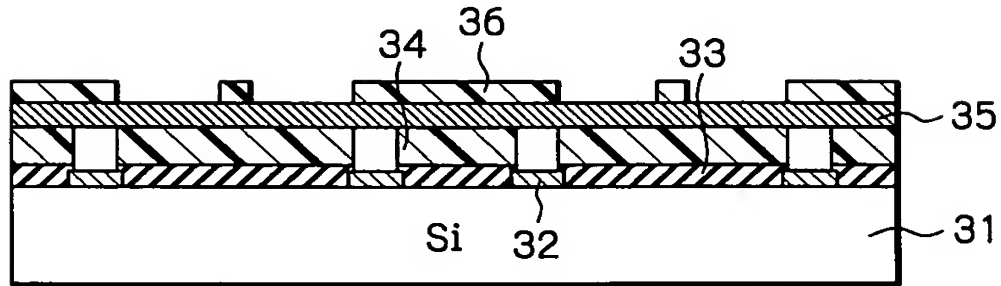


Fig. 8H

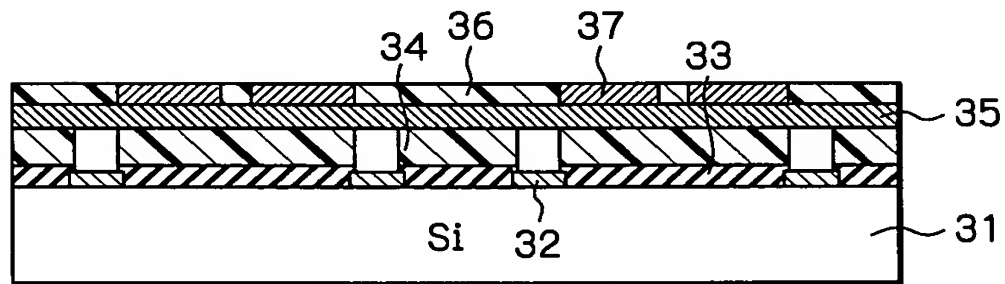


Fig. 8I

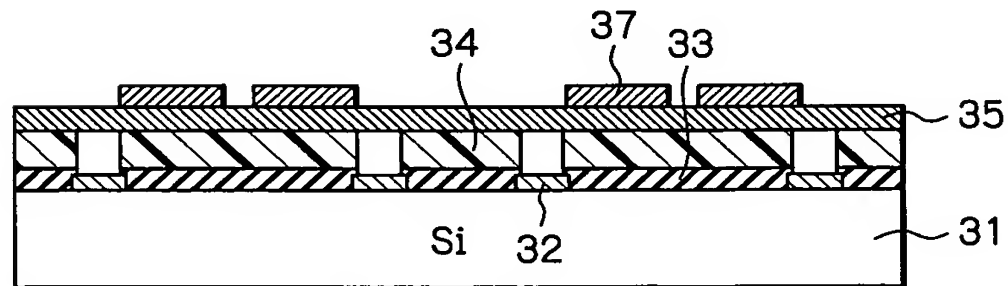


Fig. 8J

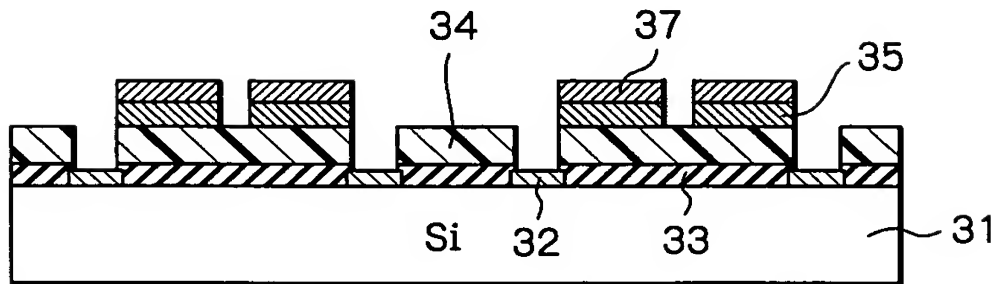


Fig. 8K

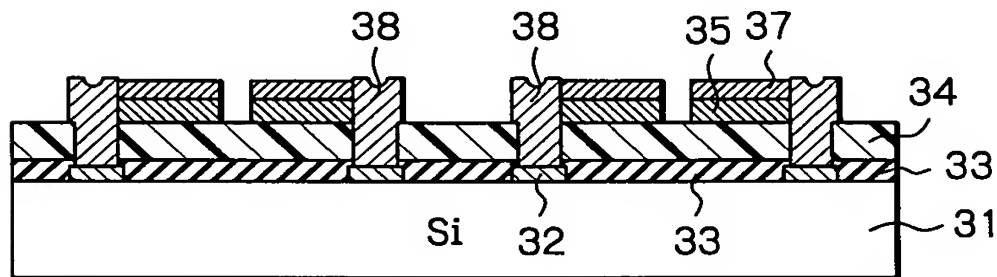
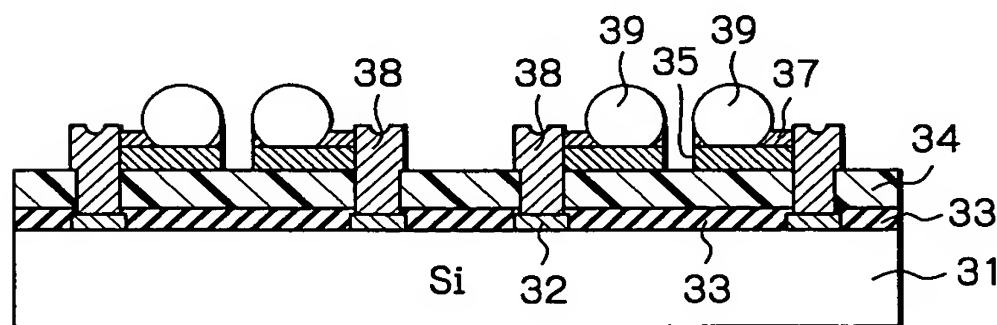


Fig. 8L



A cross-sectional view of a semiconductor device. The device consists of a substrate with layers 31, 32, and 33. A silicon (Si) region is indicated. Various components are labeled with numbers: 34, 35, 37, 38, 39, and 40.

The figure consists of two cross-sectional views of a semiconductor device, labeled (a) and (b). Both views show a substrate labeled 'Si'.

View (a) shows a substrate with a layer 31. On top of layer 31, there is a layer 32. A layer 33 is formed on top of layer 32, with two circular features 34 and 35 embedded within it. A layer 36 is formed on top of layer 33, with two circular features 37 and 38 embedded within it. A layer 39 is formed on top of layer 36, with two circular features 39 and 40 embedded within it.

View (b) shows the same structure as view (a), but with an additional layer 41 formed on top of layer 39. Layer 41 is a thin layer that covers the entire surface of the device, including the circular features 39 and 40.

Fig. 9A

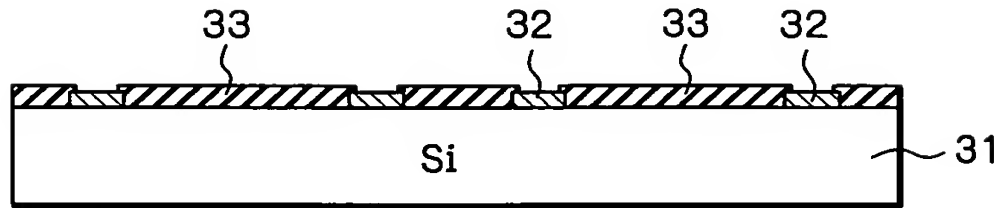


Fig. 9B

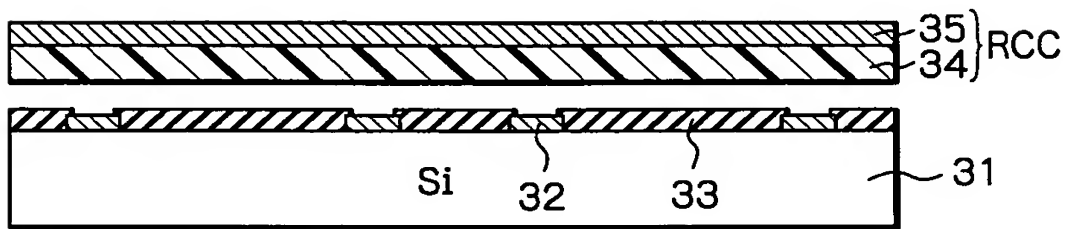


Fig. 9C

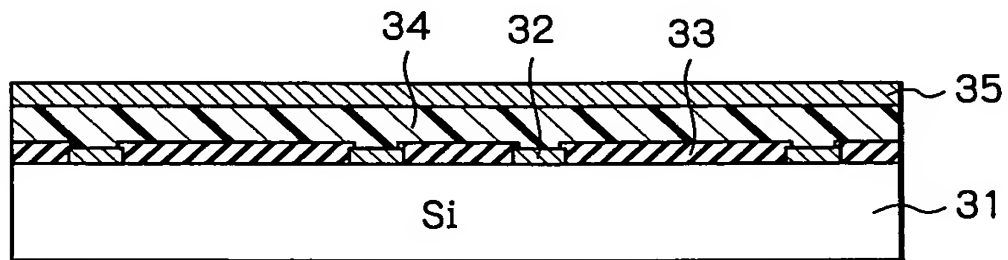


Fig. 10A

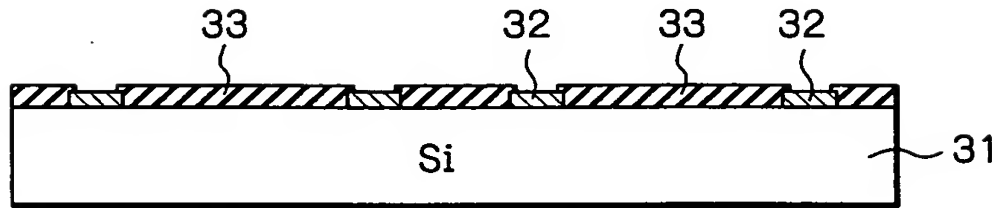


Fig. 10B

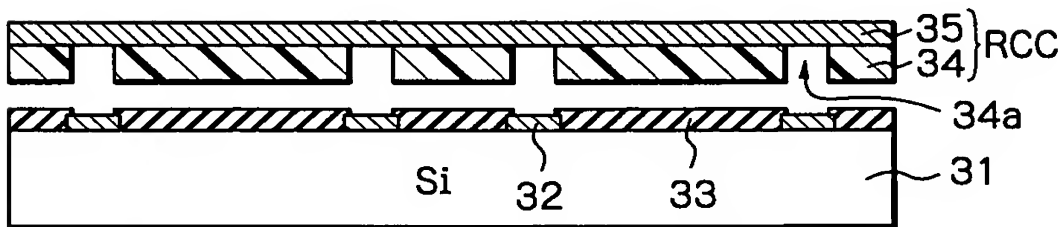


Fig. 10C

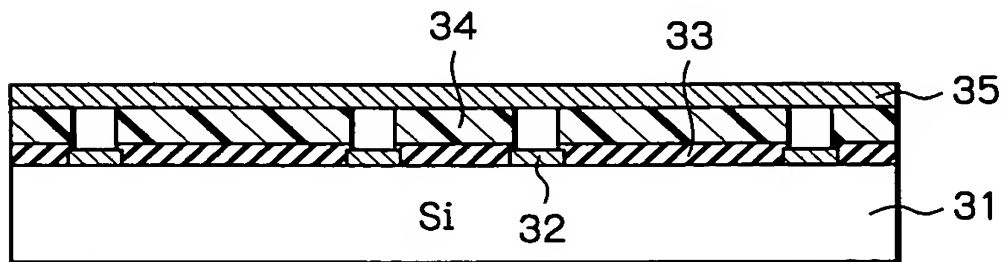


Fig. 11A

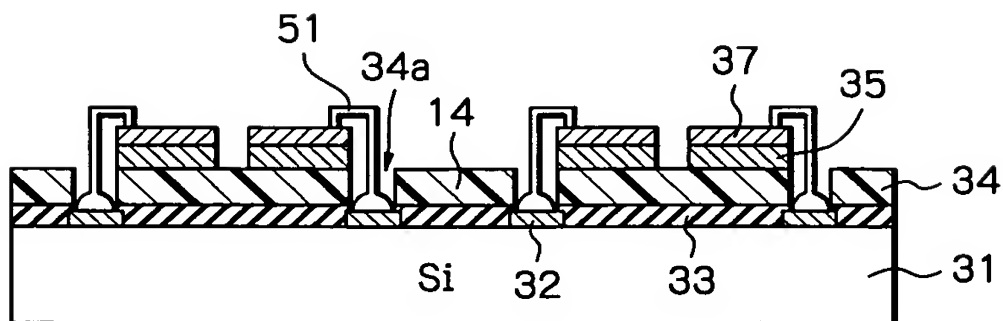


Fig. 11B

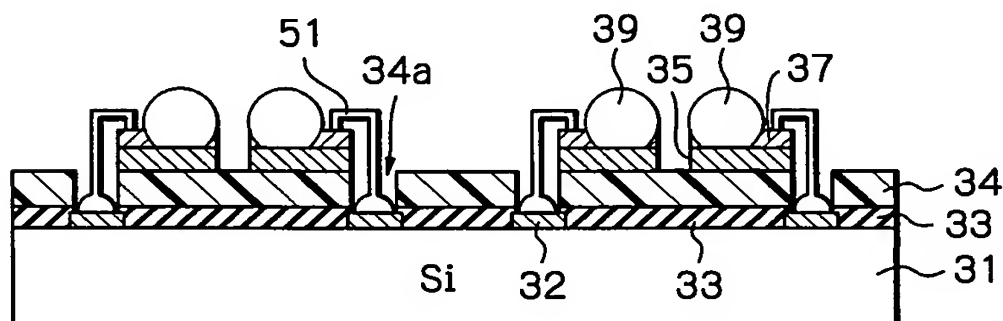
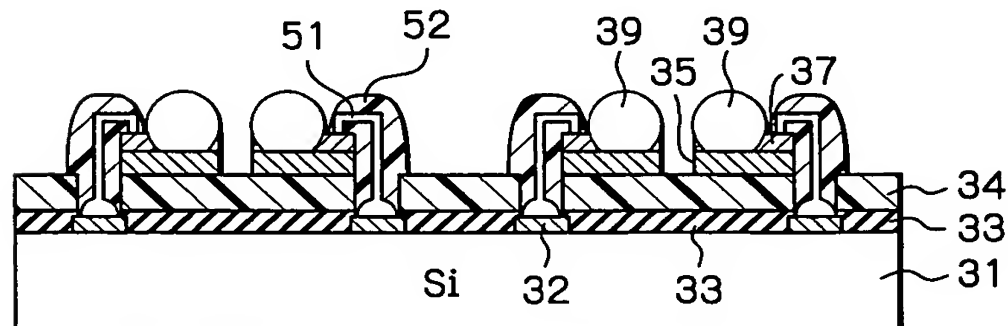


Fig. 11C



The figure shows two cross-sectional views of a semiconductor device. The left view shows a substrate labeled 'Si' with a hatched layer 31. On top of 31 are two structures: one with a central dome 51 and side domes 52, and another with a central dome 39 and side domes 37. The right view shows the same structures after further processing. The central domes are now labeled 32 and 33, and the side domes are labeled 35 and 37. A new hatched layer 34 is shown on top of the previous structures. The substrate 31 is still visible at the bottom.

Fig. 12A

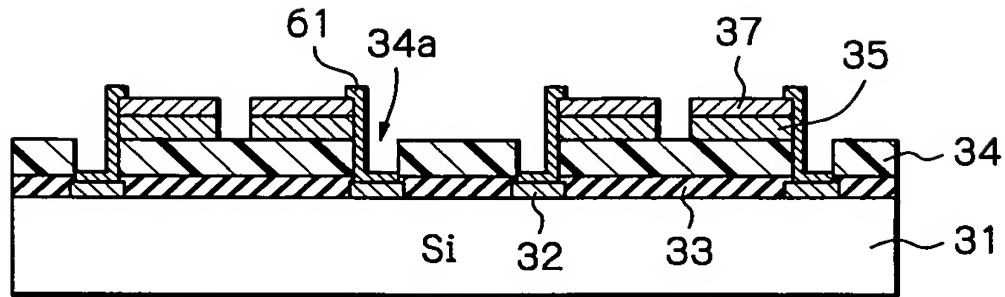


Fig. 12B

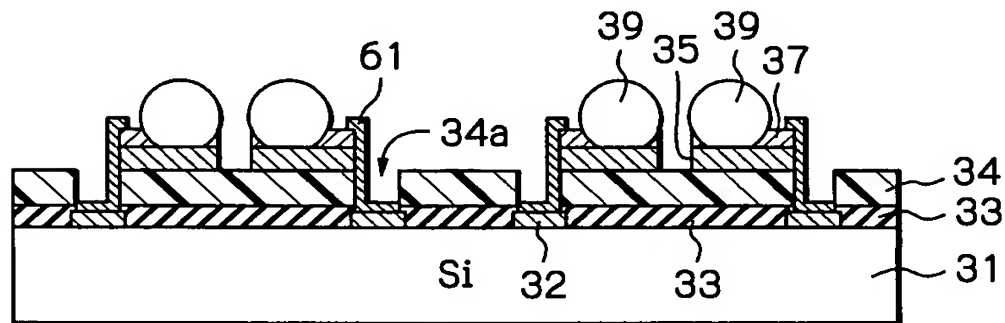
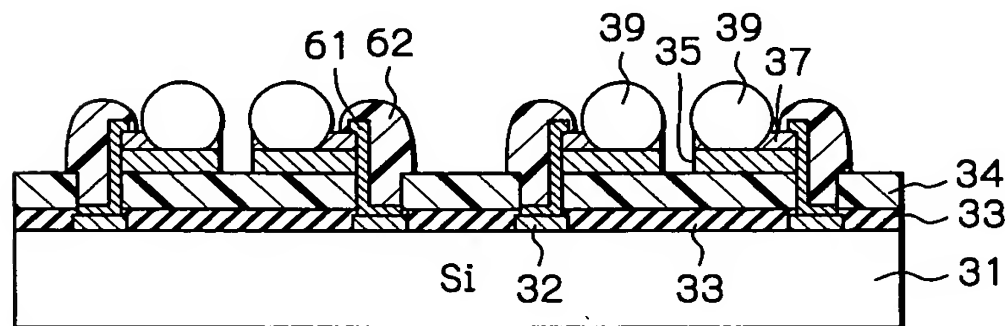


Fig. 12C



Title: METHOD OF MANUFACTURING A
FLIP-CHIP SEMICONDUCTOR DEVICE
WITH A STRESS-ABSORBING LAYER
MADE OF THERMOSETTING RESIN

Inventor(s): Hirokazu HONDA

DOCKET NO.: 067123-0195

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Fig. 12D

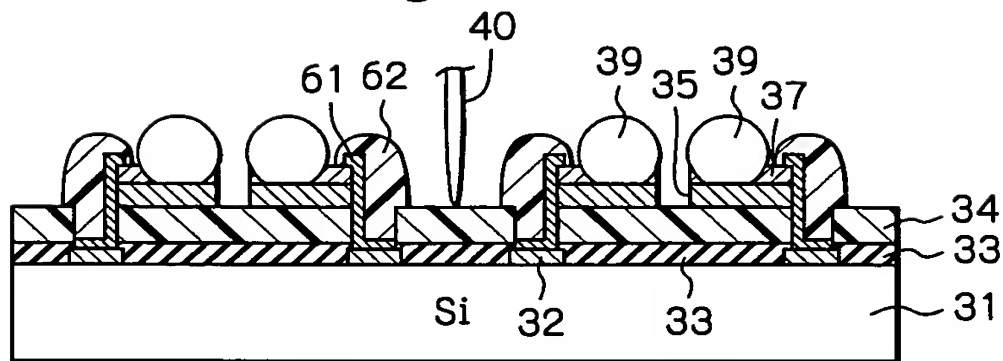


Fig. 12E

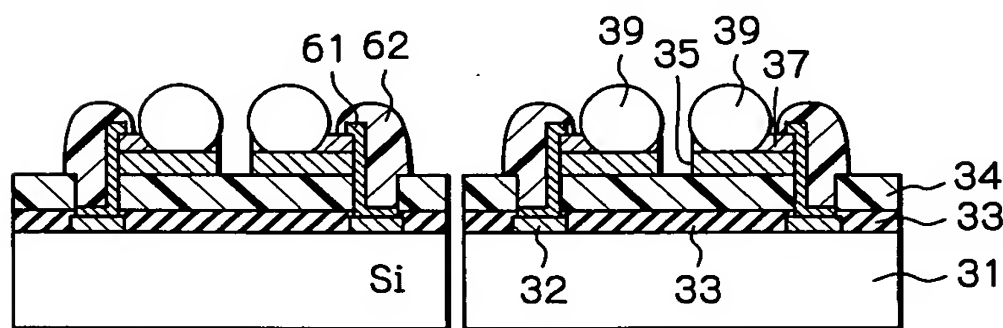


Fig. 13A

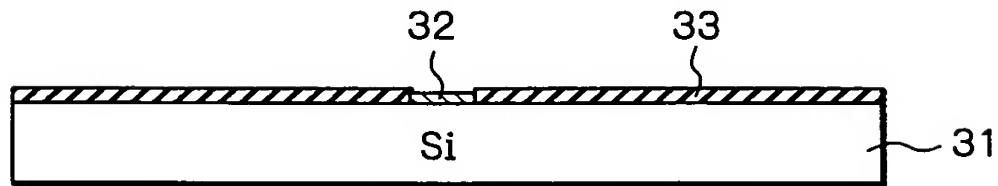


Fig. 13B

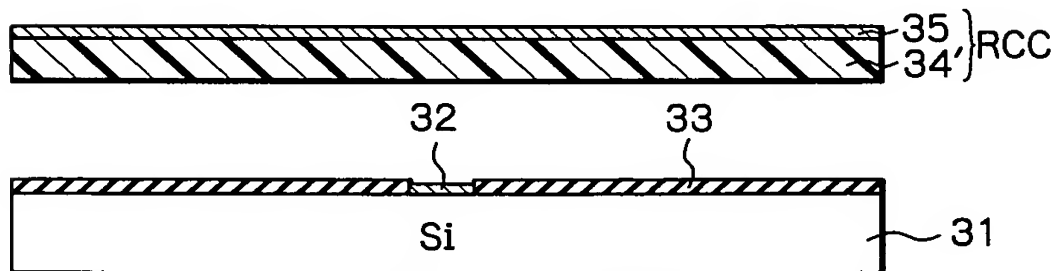
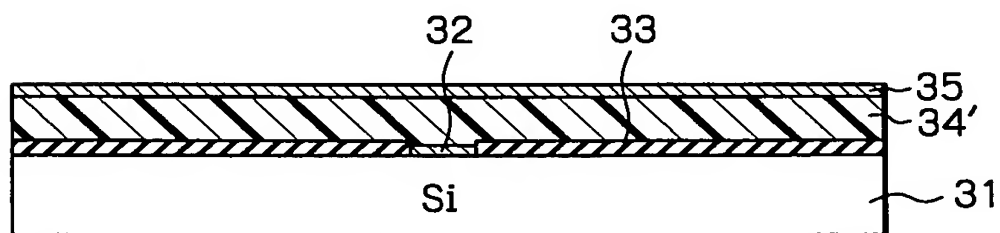


Fig. 13C



Title: METHOD OF MANUFACTURING A
FLIP-CHIP SEMICONDUCTOR DEVICE
WITH A STRESS-ABSORBING LAYER
MADE OF THERMOSETTING RESIN

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Fig. 13D

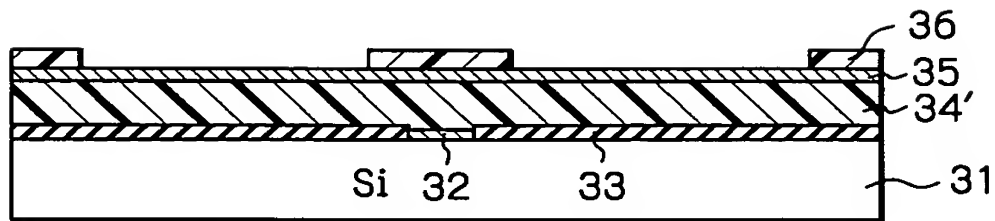


Fig. 13E

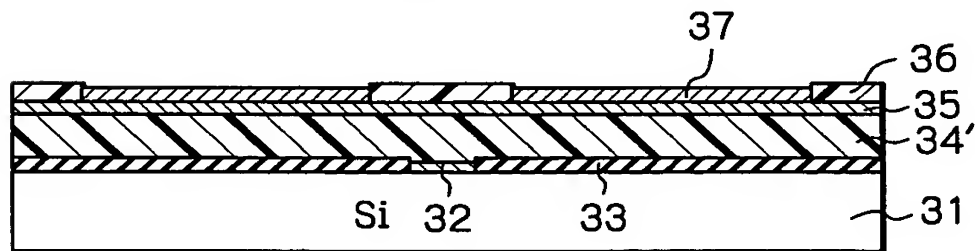


Fig. 13F

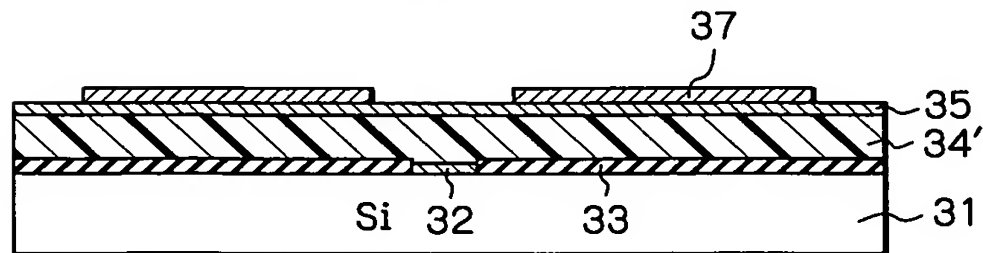


Fig. 13G

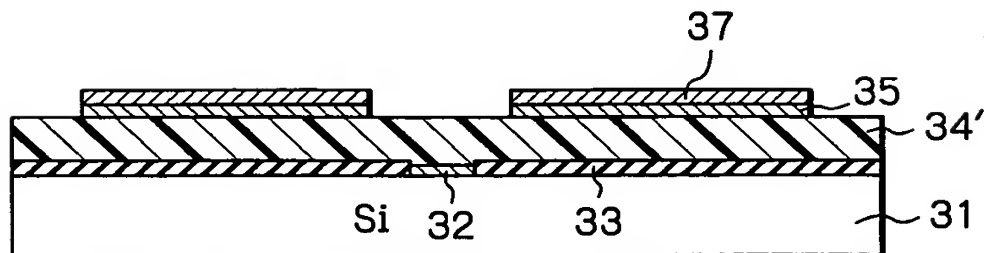


Fig. 13H

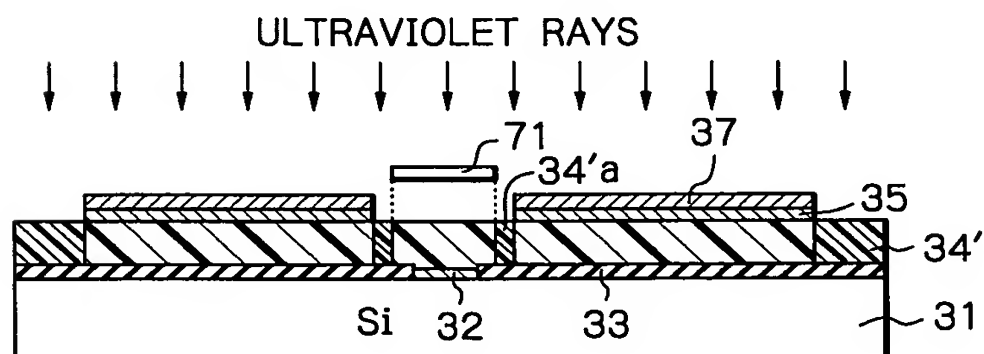


Fig. 13I

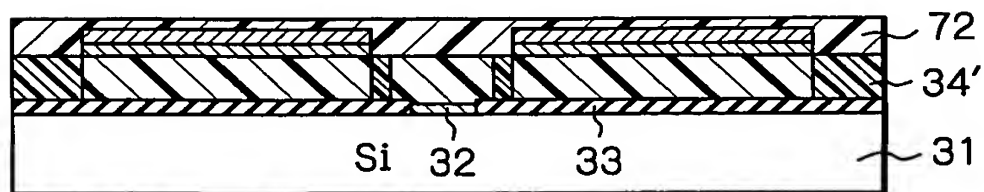


Fig. 13J

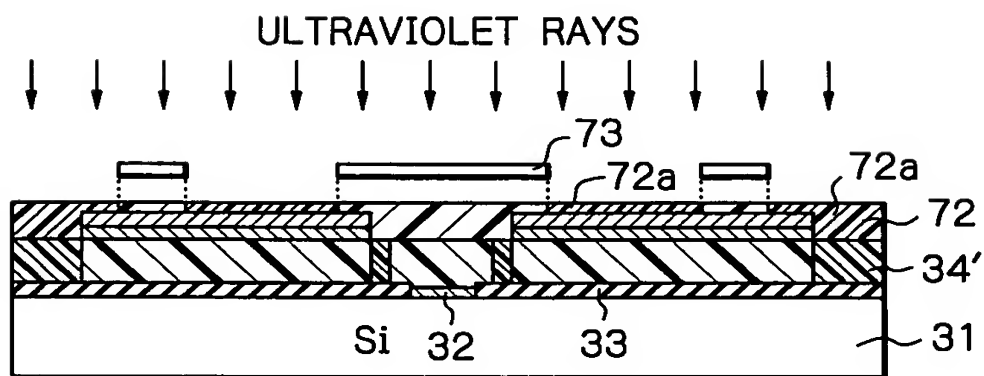


Fig. 13K

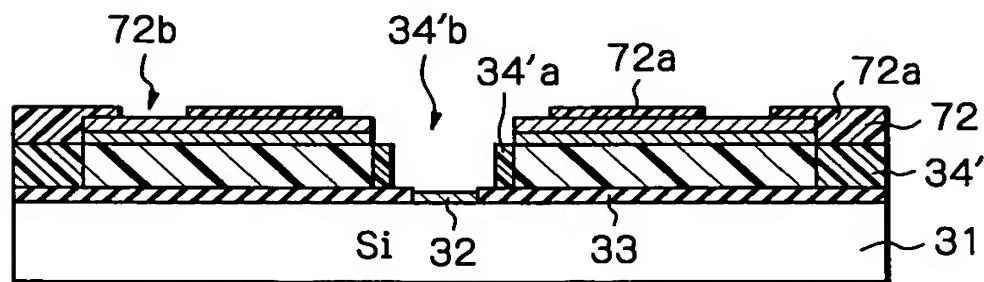


Fig. 13L

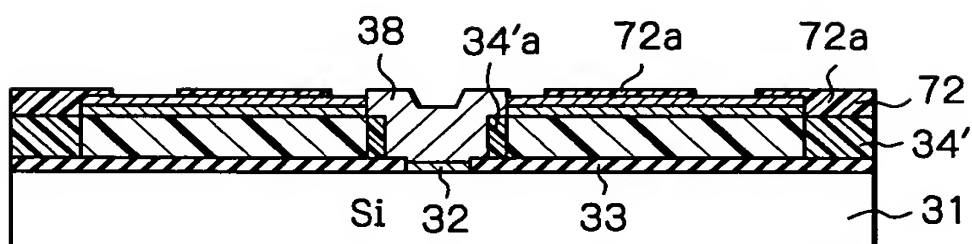


Fig. 13M

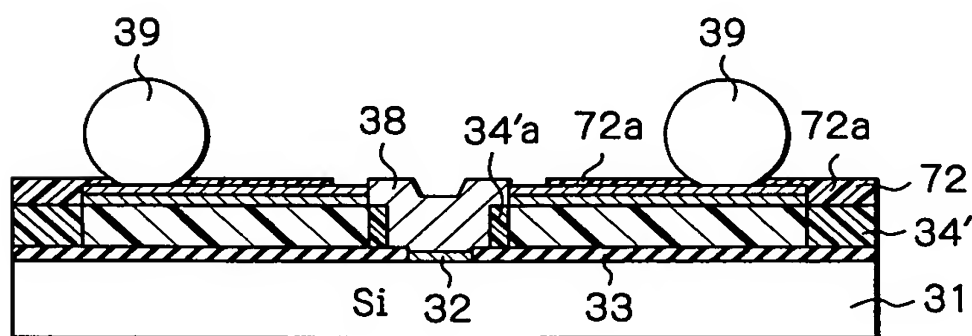


Fig. 14A

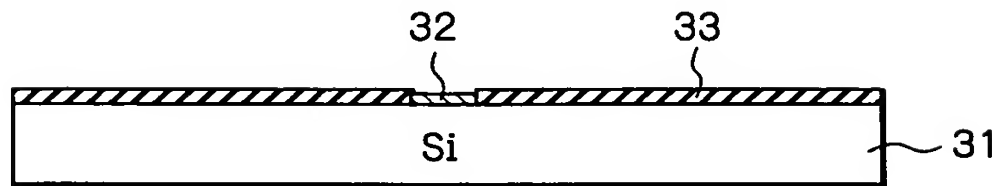


Fig. 14B

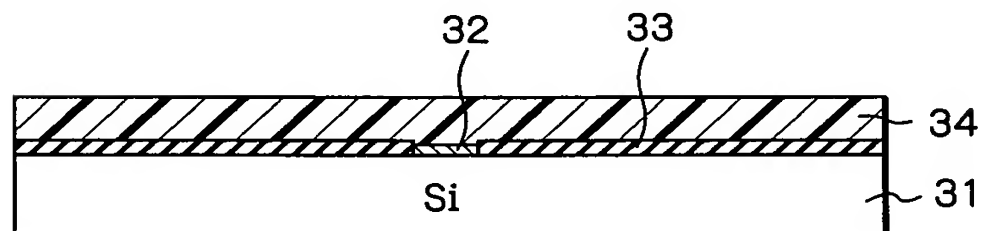


Fig. 14C

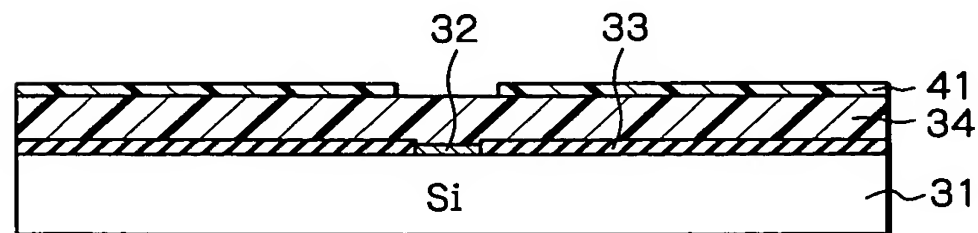


Fig. 14D

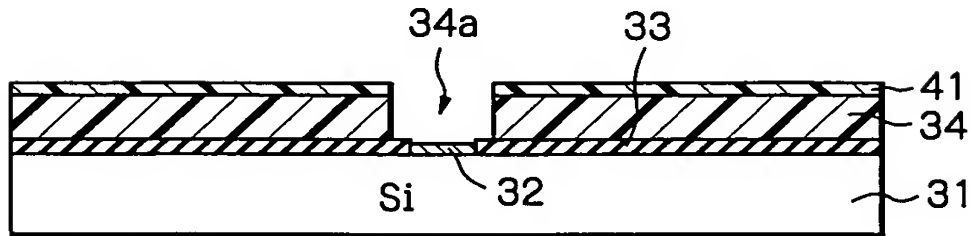


Fig. 14E

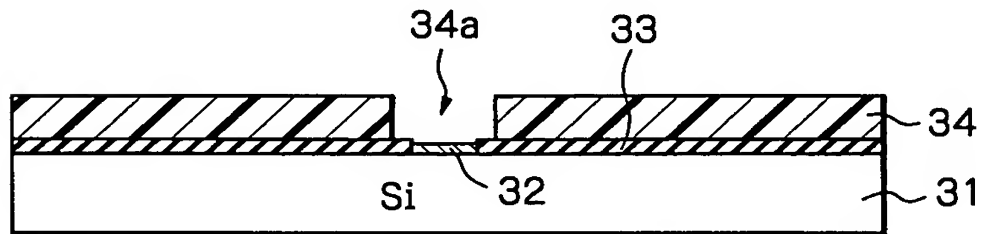


Fig. 14F

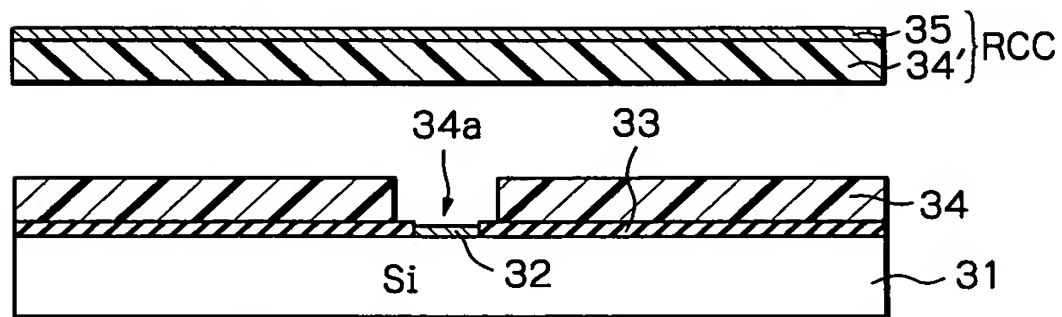


Fig. 14G

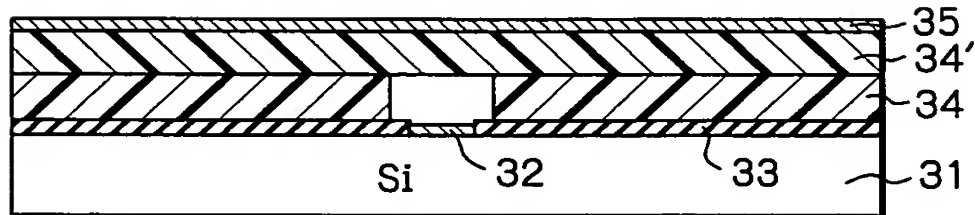


Fig. 14H

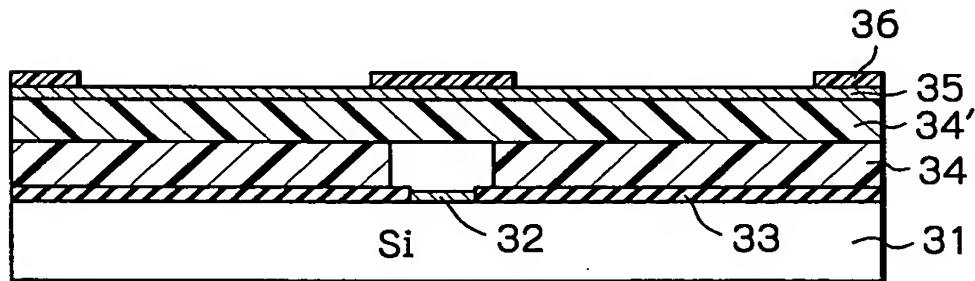


Fig. 14I

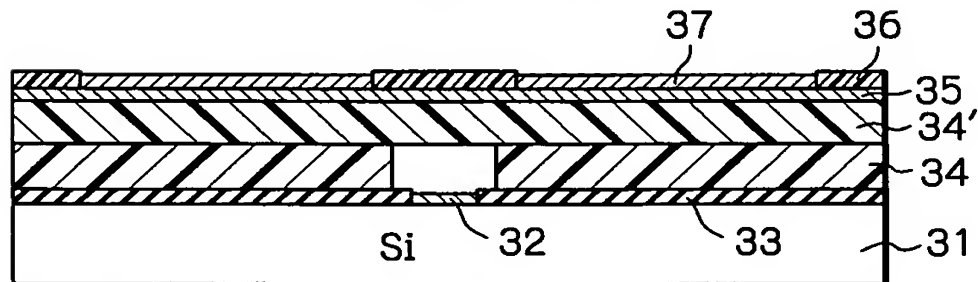


Fig. 14J

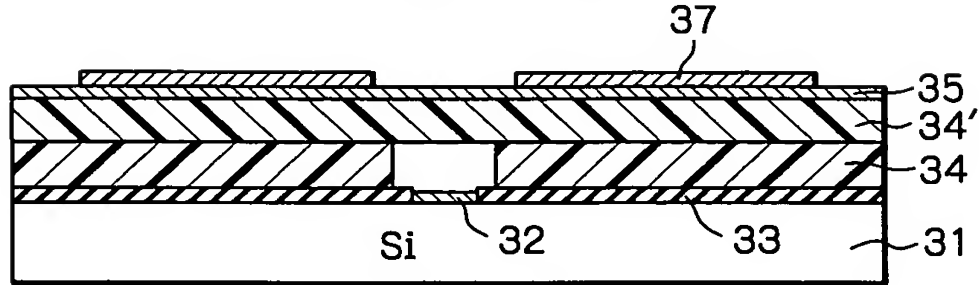


Fig. 14K

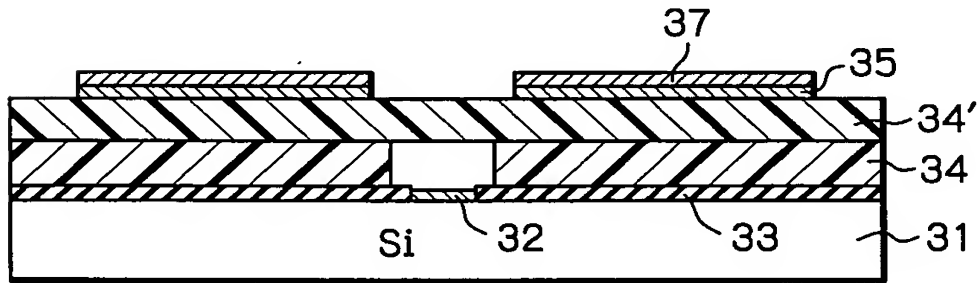


Fig. 14L

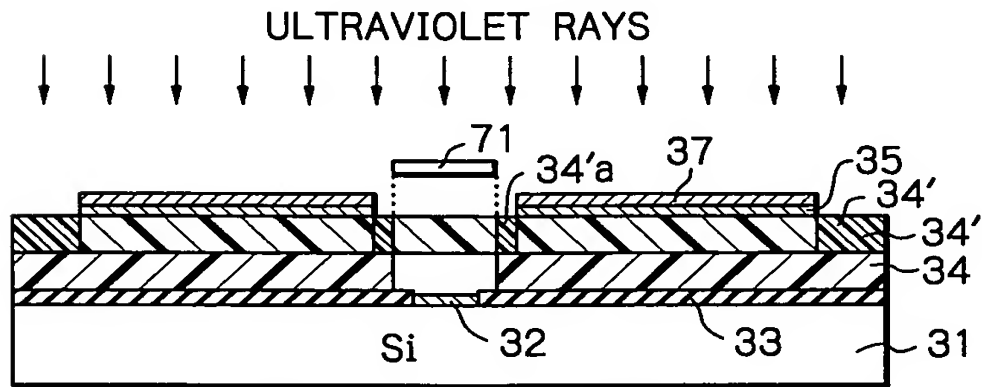


Fig. 14M

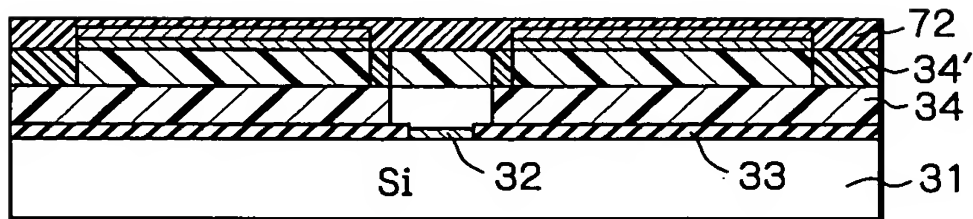


Fig. 14N

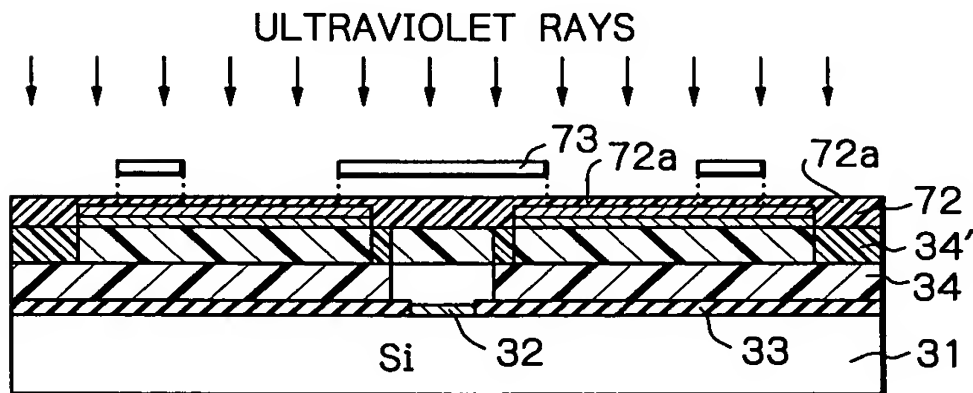
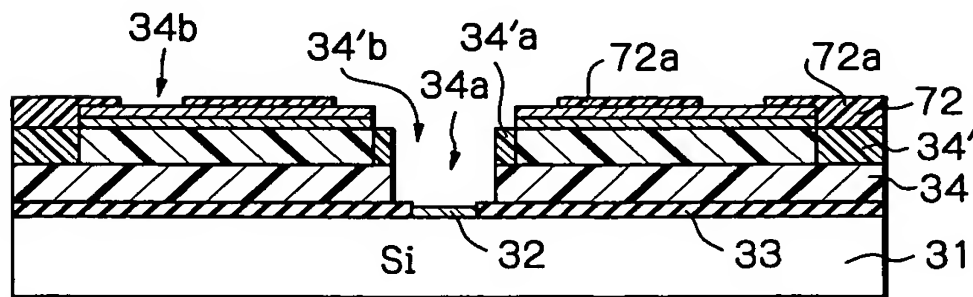


Fig. 14O



Title: METHOD OF MANUFACTURING A
FLIP-CHIP SEMICONDUCTOR DEVICE
WITH A STRESS-ABSORBING LAYER
MADE OF THERMOSETTING RESIN

Inventor(s): Hirokazu HONDA

DOCKET NO.: 067123-0195

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Fig. 14P

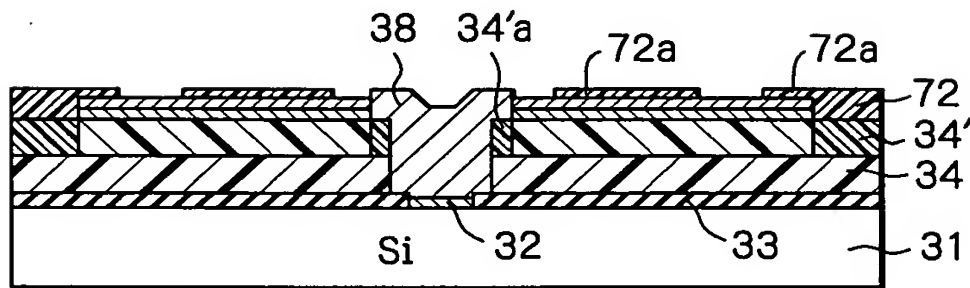


Fig. 14Q

